

REMARKS

The present Amendment is in response to the Final Office Action having a mailing date of July 16, 2003. Claims 1-22 are pending in the present Application. Applicant has amended claims 1, 2, 12, 13, and 14. Applicant has also added claims 23-24. Consequently, claims 1-24 remain pending in the present Application.

This application is under Final Rejection. Applicant has presented arguments hereinbelow that Applicant believes should render the claims allowable. In the event, however, that the Examiner is not persuaded by Applicant's arguments, Applicant respectfully requests that the Examiner enter the Amendment to clarify issues upon appeal.

Applicant has amended claim 1 to recite that the optical circulator includes a beam deflector for altering a direction of the first optical path and the second optical path. Claim 1 recites that the beam deflector is located between the first rotator pair and the second birefringent material such that the beam deflector is directly optically coupled to the second birefringent material. Similarly, Applicant has amended claims 12 and 13 to recite that the first optical path and second optical path establishing means establish the first optical path and the second optical path without the use of wave plates. Applicant has also added claims 23 and 24. Claims 23 and 24 recite that the first and second optical path establishing means includes a first rotator pair, and a beam deflector. The first birefringent material is between first rotator pair and the first port. The beam deflector is for altering the direction of the first optical path and the second optical path. The beam deflector is also located between the first rotator pair and the second birefringent material such that the beam deflector is directly optically coupled to the second birefringent material. Support for the amendments to claims 1, 12, and 13 as well as for new claims 23-24 can be found in the specification, 7, line 10-page 8, line 21 and Figures 3A-3D. Applicant has

also amended claims 2 and 14 to harmonize these claims with claims 1 and 13, respectively.

Accordingly, Applicant respectfully submits that no new matter is added.

The Examiner rejected claims 1-22 under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,366,402 (Li).

Applicant respectfully traverses the Examiner's rejection. Independent claim 1 recites an optical circulator in which the beam deflector is directly optically coupled to the second birefringent material. Because the beam deflector is directly optically coupled to the second birefringent material, there is no half wave plate between the beam deflector and the second birefringent material. Similarly, claims 12 and 13 recite an optical circulator and method in which the optical path establishing means establishes the first and second optical paths without the use of wave plates. As a result, the optical circulators recited in claims 1 and 12 and used in the method recited in claim 13 have a simpler configuration and a broader temperature bandwidth.

Specification, page 16, lines 11-13. Because no half wave plates are used no alignment between the rotators and the corresponding half wave plates needs to be performed. Specification, page 16, lines 14-15. Thus, the optical circulators recited in claims 1 and 12 and used in the method recited in claim 13 has a simpler configuration, is more easily manufactured, has a lower cost, and a broader temperature bandwidth for isolation, and may have a smaller footprint and a lower insertion loss. Specification, page 16, lines 18-22.

Li also discloses an optical circulator. Although the optical circulator of Li functions well for its intended purpose, the optical circulator of Li does include a half wave plate between the first polarization beam deflector and the second birefringent material. Li, Figures 3A-3B, and col. 4, lines 3-10. Consequently, the first polarization beam deflector 114 is not directly optically coupled with the second birefringent material 118. Thus, in contrast to the optical circulators

recited in claims 1 and 12 and the method recited in claim 13, Li includes a half wave plate between the first polarization beam deflector and the second birefringent material. Consequently, Li fails to teach or suggest an optical circulator in which the first polarization beam deflector is directly optically coupled to the second birefringent material. For the same reasons, Li fails to teach or suggest an optical circulator or method in which the optical path establishing means establish the first and second optical paths without the use of wave plates. Consequently, Li fails to teach or suggest the optical circulators and method recited in claims 1, 12, and 13.

Accordingly, Applicant respectfully submits that claims 1, 12, and 13 are allowable over the cited references.

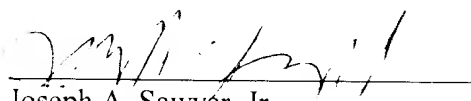
Claims 2-11 and 14-22 depend upon claims 1 and 13, respectively. New claims 23-24 depend upon independent claims 12 and 13, respectively. Consequently, the arguments herein apply with full force to claims 2-11 and 14-24. Accordingly, Applicant respectfully submits that claims 2-11 and 14-24 are allowable over the cited references.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,

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